



WEB-TECH

Optimus® & Optimus Plus® range of electronic Integrators.



WEIGH BELT FEEDERS

LOSS IN WEIGHT FEEDERS, VIBRATORY & SCREW TYPES.

Optimus is an advanced, precision, microprocessor based, bulk solids feeder controller. Its unique design makes it suitable for use with the Web-Tech range of feeders, or as upgrade controller for most bulk solids feeders that are in current use. Ample input & output facilities combined with a range of industrial communications protocols (Device-Net®, Profi-Bus® & EtherNet®) make Optimus a powerful and versatile instrument. Housed in an industrial enclosure rated to IP65X specification, Optimus is suitable for use in the most demanding of industrial environments. Optimus Plus is an enhanced version of Optimus. Using a grayscale, quarter VGA screen, Optimus Plus has been designed for use with vibratory & screw type LIW feeders. The larger display allowing for the presentation of ample amounts of feeder data and alarms.

Features.

- ◆ Microprocessor based. AMD Elan SC400 microprocessor running at 33, 66 or 100 MHz
- ◆ All commands, readings etc. are entered via "thick film keypad".
- ◆ Simple Menu driven interface.
- ◆ Dot matrix 64 x 240 pixel graphics LCD with digitally adjustable LED backlight brightness and LCD contrast or an optional ¼ VGA (320 x 240 pixel) LCD screen with digitally adjustable CCFL backlighting and screen contrast.
- ◆ No hieroglyphics are used.
- ◆ Local totaliser read out 8 precision. Local mass rate read out 6 digit precision. Multiple screens for easy viewing of mass rate, set point, PID output.
- ◆ Remote totaliser output +5V, 10V Clean relay contacts per increment.
- ◆ Remote 4-20mA/ mass rate output.
- ◆ Programmable PID 4/20mA, 0/25mA & current loop, 0-10v .
- ◆ Both the 4-20mA outputs can be either loop powered or user driven.
- ◆ All analog and digital outputs are isolated.
- ◆ Programmable autozero tracking
- ◆ Auto-gain: no user calculations required.
- ◆ Accepts belt speed input from high speed optical encoders or magnetic pick ups.
- ◆ Modular construction for ease of fault finding; and repair.
- ◆ Should Optimus require a firmware update or special functions required. The firmware can be sent in a compact flash card and simply updated by installing the card.
- ◆ Batching functions.

Easy Set Up and Calibration

A twenty one key, keypad is used to enter calibration data, as well as to access. Multipurpose function keys provide a method of navigating through the menu structure. Historical trending is available allowing for process variable examination. All relevant I/O status conditions are viewable at any time, along with the load cell and tachometer outputs in real time. Initial and ongoing calibration data is held in non volatile RAM. An optional on board flash memory card provides the user with an elegant method of updating system firmware. The flash card also allows for the logging of up to 2 weeks PV, set point, load cell tachometer and various other parameters. Optimus calibration procedures are menu driven and prompts are full English statements, adjustments to any parameters are easily accomplished by just a few key strokes. With an optional EtherNet card installed, all the menu screens and the associated variable can be displayed on a PC. Converting the standard EtherNet connection to a fiber optic connection provides ample transmission distance. Optional add on cards provide for the use of ProfiBus® & DeviceNet®.

Load and Speed Detection

Load cells of varying output ranges can be used, making Optimus the obvious choice when contemplating updating older belt scales, weigh

feeders or Loss in Weight systems.

A wide range of belt speed encoders can be employed with outputs ranging from a minimum of 2.5V to 50V.

Magnetic pick-up devices are easily utilised with no changes to Optimus or the magnetic pick-up. Where a preference is shown for precision high speed and high resolution. Web-Tech manufactures a range of industrially hardened optical encoders. High quality seals and bearings ensure that the device will perform under the harshest of industrial conditions providing the user with reliable and long term service. An optional stainless steel housing is available.

Outputs for Remote Counters and Displays

Optimus has a range of industrial outputs, which allow it to communicate with a wide variety, of displays and controls. There are 6 individual analog output circuits that can be configured from the keyboard to be 4-20mA / 0-24mA 0-10VDC Any of these outputs can be allocated to any of the variables generated by Optimus.

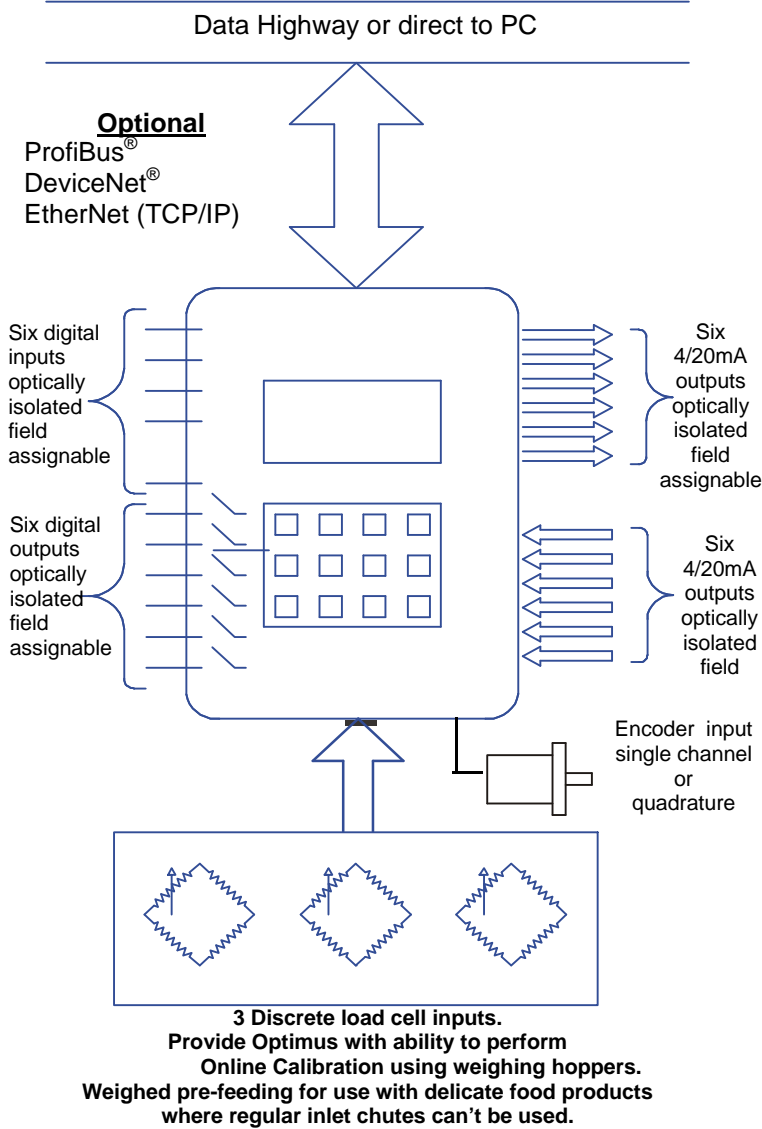
Typically these variables are mass rate (PV), PID modified demand signal, belt loading, load cell loading and belt speed.

These signals can be used by a PLC or SCADA to monitor the performance of the feeder in real time. Naturally all this data and more is digitally available at the RS 485, RS 232 Ports as well as the EtherNet, Profibus® & DeviceNet® PCB's.



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Optimus Electronic Integrator



Technical Specification

Power Requirements:-

Universal Voltage, auto-ranging:-
 90 - 246VAC 120 - 370VDC 12VDC
 Frequency, autoranging:- 47 - 440Hz

LOAD CELL INTERFACE:-

Supports up to three independent load cell channels
 22bit (4.2 million values) analog to digital converter (ADC) on each channel.
Temperature compensated / self calibrating ADC
Fourth order digital filter attenuates interference at the sampling frequency and it's harmonics by 160dB, eg 50 & 60Hz. Max sampling rate of 1kHz.
Ultra stable load cell drive circuitry capable of driving 8 350Ω load cells in parallel.
 Load Cell circuitry shielded for greater noise immunity

CURRENT LOOP INPUT & OUTPUT:-

Supports up to 6, current loop inputs, into 200Ω load, locally programmable for 0-20mA, 4-20mA & 0-24mA.
Supports up to 6, current loop outputs, into 350Ω load, locally programmable for 0-20mA, 4-20mA & 0-24mA.

SERIAL INPUT/OUTPUT :-

Supports **DeviceNet**, **ProfiBus** & **EtherNet** (TCP/IP) when ordered with optional interface PCB. Standard optically isolated fully/half duplex RS485 (Max 38400baud) & RS 232 port with RTC/CTS handshaking (Max 115200baud)

WIRING PCB

5mm pitch screw terminations for all inputs, outputs and screens.
 Clear labelling for each connection.
 Supports up to eight relays for digital outputs (either 24V PLC type or 240V mains type) with 12V coil drive.

COMPACT FLASH CARD

Supports compact flash cards thus allowing for "on the fly" program update or multi- channel data logging.

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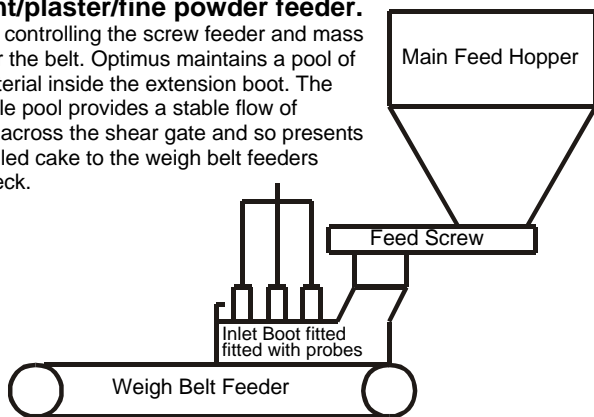
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Cement/plaster/fine powder feeder.

Optimus controlling the screw feeder and mass rate over the belt. Optimus maintains a pool of feed material inside the extension boot. The adjustable pool provides a stable flow of material across the shear gate and so presents a controlled cake to the weigh belt feeders weigh deck.



Topping Food Feeder

When handling difficult product like shredded cheese. Product compaction is a problem. Optimus via it's variety of I/O can control all aspects of this feeder control.

